Communicating Culture

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Nowadays, I'm hearing about a new breed of globalization, different from the one spreading Coca-Cola and Pokémon around the world. In our "small world," just as information moves across the globe, so do people. We see people with different cultural backgrounds learning to understand and enjoy the regional cultures they encounter.

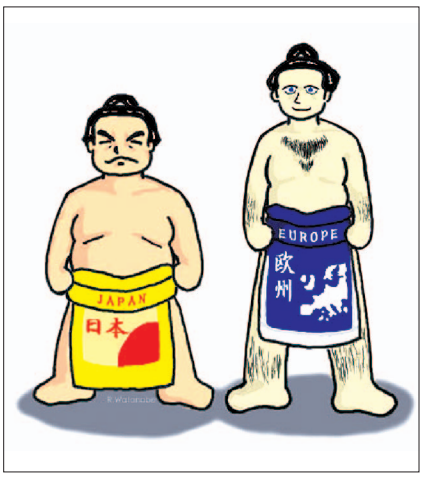
Consider, for example, sumo—Japanese traditional wrestling. Half of the upper-ranked sumo wrestlers aren't born in Japan but rather Mongolia, Russia, Bulgaria, and so on. "Sumo, Japan's national sport, has become an international tradition," a head of state exclaimed. I have a different view. I don't think we'll see sumo wrestling with the traditional hairstyle of *mage* spreading around the world. It's not sumo culture that's spread across the globe. Rather, people who appreciate sumo's excitement have increased in number regardless of where they live and have started to support sumo. In this way, the Japanese don't have to preserve the sumo tradition alone anymore. Similarly, people with various cultural backgrounds can preserve other regions' indigenous cultural traditions.

Some people have called this phenomenon *glocalization*. In such situations, the languages spoken vary.[1] Although promoting English as a common language has its own role, taking the effort to understand other languages greatly helps in understanding culture. But hundreds of languages are spoken around the world. It's simply too much to tackle this challenge all by ourselves. Will machine translation be helpful?

Multilingual conversational agents

After spending quite some time on this subject and trying several approaches, I believe that translation errors will be quite serious even in the future.[2] Machine translation systems developed for written text don't translate spoken languages well. Machine translation research seems to have taken the *transparent channel* as a metaphor, in which on one end, you say "Hello" and on the other end hear "Moshi Moshi." It's natural that the channel's noise ratio became an evaluation measure, with the improvement of translation quality as the dominant research goal. However, when the level of error isn't acceptable, the user will need to rephrase the input text message. Unfortunately, the user probably doesn't know how to rephrase the text to get a good translation. To solve such *grounding* problems, why doesn't the translation system simply say, "I can't translate it"?

What if a kid who understands several languages joins a multinational team. Will this kid be a useful resource? Even if the kid's translation accuracy isn't perfect, if she recognizes this limitation and can suggest other words, she could be a useful resource. This is called the *human interpreter* metaphor. What if we evaluate machine translators by their interactivity rather than their accuracy? Interactivity includes the ability to state "I don't understand" or "please rephrase this sentence." The key to interactivity lies in the metalevel architecture: "To know that we know what we know, and to know that we do not know what we do not know—that is true knowledge." This ability will allow interaction between users and machine translators to improve grounding and also the negotiation of meaning.



Sumo: A new breed of globalization.

Ubiquitous cultural world

In the age of glocalization, people also move freely, making face-to-face interactions critical. Culturally situated conversational agents to assist foreigners will be valued.

1541-1672/06/$20.00 © 2006 IEEE
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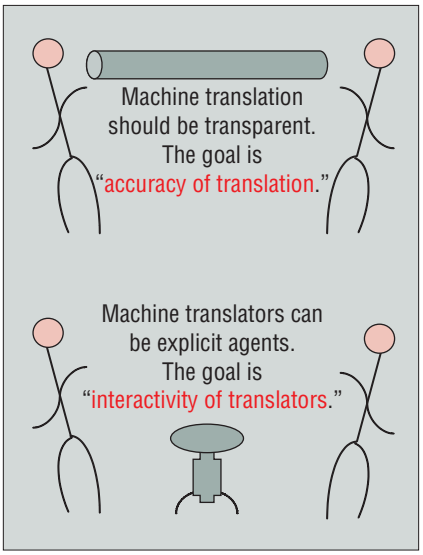

Machine translation: The transparent-channel and human-interpreter metaphors.

Going beyond the issue of translation, will it be possible to create such intelligent agents? In 1987, the intelligent software agent Phil appeared in an Apple concept video showcasing the idea of a Knowledge Navigator. Although the Internet and World Wide Web have fulfilled some of the Knowledge Navigator's promise, such an all-powerful agent has yet to arrive.

In 1998, using a simple bartender agent, Barbara Hayes-Roth showed that de facto roles shape successful interactions.[3] When agents are given a role such as "bartender," conversations become naturally constrained to those of a bartender and customer. For software agents with limited intelligence, her approach makes conversations easier. Given this assessment, what if we assume all objects can participate in conversations in the ubiquitous environment?

Once upon a time, Alice walked into a wonderland and saw a talking rabbit. So, when she sees a mouse, she thinks: "Would it be of any use, now, to speak to this mouse? Everything is so out-of-the-way down here that I should think very likely it can talk." Similarly, the Alice of tomorrow will talk with her refrigerator and dishwasher as well as vending machines:

"Hum…. Who are you?"

"I am called Pocari Sweat."

"Oh, do Japanese drink sweat?"

"Oh dear, I am the most famous soft drink beverage in Japan!"

Such conversations with your environment will ease the feelings of alienation in a foreign culture. Creating single-function conversational agents is easier than creating omniscient agents. The challenge then is how to control and manage many agents that can speak. Just as Alice did, it might be necessary to say, "Nobody asked YOUR opinion!"

By moving away from metaphors such as transparent-translation channels or omniscient agents, will it be possible to create communicating cultures with simple conversational agents, which might make errors but recognize (and fulfill) their expected role? By accomplishing this objective, intercultural experiences will be a lot more enjoyable, and many may feel that we'll be preserving the various unique cultures existing around the world. ◻

References

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Ubiquitous conversational agents. (photos by Michie Abe and Takara Net)

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